



IFW

PTO/SB/21 (09-04)

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/637,847
Filing Date	August 7, 2003
First Named Inventor	Carl L. Hansen
Art Unit	1732
Examiner Name	Edmund H. Lee
Attorney Docket Number	20174C-004940US

ENCLOSURES (Check all that apply)

- | | | |
|---|---|--|
| <input type="checkbox"/> Fee Transmittal Form
<input type="checkbox"/> Fee Attached
<input type="checkbox"/> Amendment/Reply
<input type="checkbox"/> After Final
<input type="checkbox"/> Affidavits/declaration(s)
<input type="checkbox"/> Extension of Time Request
<input type="checkbox"/> Express Abandonment Request
<input checked="" type="checkbox"/> Information Disclosure Statement

<input type="checkbox"/> Certified Copy of Priority Document(s)
<input type="checkbox"/> Reply to Missing Parts/ Incomplete Application
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)
<input type="checkbox"/> Licensing-related Papers
<input type="checkbox"/> Petition
<input type="checkbox"/> Petition to Convert to a Provisional Application
<input type="checkbox"/> Power of Attorney, Revocation
Change of Correspondence Address
<input type="checkbox"/> Terminal Disclaimer
<input type="checkbox"/> Request for Refund
<input type="checkbox"/> CD, Number of CD(s) _____
<input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Status Letter
<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
SB/08
34 References
Return Postcard |
|---|---|--|

Remarks The Commissioner is authorized to charge any additional fees to Deposit Account 20-1430.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Townsend and Townsend and Crew LLP
Signature	<i>Patrick M. Boucher</i>
Printed name	Patrick M. Boucher
Date	December 2, 2005

Reg. No. 44,037

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Signature	<i>Janet L. Newmaker</i>
Typed or printed name	Janet L. Newmaker

Date December 2, 2005

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:

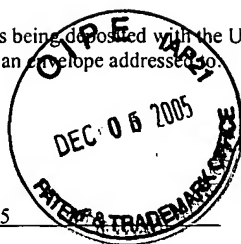
Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

On December 2, 2005

TOWNSEND and TOWNSEND and CREW LLP

By: Janet L. Newmaker

Janet L. Newmaker



PATENT

Attorney Docket No.: 20174C-004940US
Client Reference Nos.: CIT 3484-CIP-CIP-CIP
and U186.210.US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Carl L. Hansen et al.

Application No.: 10/637,847

Filed: August 7, 2003

For: Microfluidic Protein
Crystallography

Customer No.: 20350

Confirmation No.: 3349

Examiner: Edmund H. Lee

Art Unit: 1732

**SUPPLEMENTAL INFORMATION
DISCLOSURE STATEMENT UNDER
37 CFR §§ 1.97 AND 1.98**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

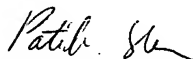
The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. Copies of the non-US references (in compliance with the requirements of 1287 OG 163) are enclosed.

It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Applicants believe that no fee is required for submission of this statement. If a fee is required, however, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

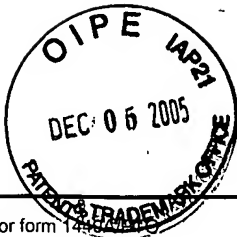
Respectfully submitted,



Patrick M. Boucher
Reg. No. 44,037

Date: December 2, 2005

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, CA 94111-3834
Tel: 303-571-4000
Fax: 415-576-0300
PMB/jln
60648820 v1



PTO/SB/08A (08-03)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	10/637,847		
		Filing Date	August 7, 2003		
		First Named Inventor	Carl L. Hansen		
		Art Unit	1732		
		Examiner Name	Edmund H. Lee		
Sheet	1	of	4	Attorney Docket Number	20174C-004940US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
	A54	US-2002-0037499 A1	03-28-2002	Quake et al.	
	A55	US-2002-0145231 A1	10-10-2002	Hansen et al.	
	A56	US-2003-0061687 A1	04-03-2003	Hansen et al.	
	A57	US-2003-0096310 A1	05-22-2003	Hansen	
	A58	US-2005-0019794 A1	01-27-2005	Nassef et al.	
	A59	US-2005-0062196 A1	03-24-2005	Hansen et al.	
	A60	US-2005-0205005 A1	09-22-2005	Hansen et al.	
	A61	US-2005-0229839 A1	10-20-2005	Quake et al.	

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)				
								<input type="checkbox"/>
								<input type="checkbox"/>
								<input type="checkbox"/>
								<input type="checkbox"/>
								<input type="checkbox"/>
								<input type="checkbox"/>
								<input type="checkbox"/>
								<input type="checkbox"/>

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	10/637,847	
			Filing Date	August 7, 2003	
			First Named Inventor	Carl L. Hansen	
			Art Unit	1732	
			Examiner Name	Edmund H. Lee	
Sheet	2	of	4	Attorney Docket Number	20174C-004940US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C146	"The Liver Chip," Technology Review, pp. 64-67, March 2003	
	C147	BLACK, HARVEY, "Tiny Technology Promises Tremendous Profits," The Scientist, Vol. 15, No. 21, 4 pages, October 29, 2001	
	C148	CHANG, JUN KEUN et al., "Functional Integration Of Serial Dilution And Capillary Electrophoresis On A PDMS Microchip," Biotechnology and Bioprocess Engineering, Vol. 8, No. 4, pp. 233-239, 2003	
	C149	CHAYEN, NAOMI E., "Protein Crystallization For Genomics: Throughput Versus Output," Journal of Structural and Functional Genomics, Vol. 4, pp. 115-120, 2003	
	C150	CHEN, CHIHCHEN et al., "Gray-Scale Photolithography Using Microfluidic Photomasks," PNAS, Vol. 100, No. 4, pp. 1499-1504, February 18, 2003	
	C151	D'ARCY, ALLAN et al., "The Advantages Of Using A Modified Microbatch Method For Rapid Screening Of Protein Crystallization Conditions," Acta Crystallographica, Vol. D59, pp. 1-3, 2003	
	C152	EYAL, SHULAMIT et al., "Velocity-Independent Microfluidic Flow Cytometry," Electrophoresis, Vol. 23, pp. 2653-2657, 2002	
	C153	FITZGERALD, DEBORAH A., "Making Every Nanoliter Count," The Scientist, Vol. 15, No. 21, 8 pages, October 29, 2001	
	C154	GAO, JUN et al., "Integrated Microfluidic System Enabling Protein Digestion, Peptide Separation, And Protein Identification," Analytical Chemistry, Vol. 73, No. 11, pp. 2648-2655, June 1, 2001	
	C155	GARNO, JAYNE C. et al., "Production Of Periodic Arrays Of Protein Nanostructures Using Particle Lithography," Langmuir, Vol. 18, No. 21, pp. 8186-8192, 2002	
	C156	GROVER, WILLIAM H. et al., "Monolithic Membrane Valves And Diaphragm Pumps For Practical Large-Scale Integration Into Glass Microfluidic Devices," Sensors and Actuators B, Vol. 89, pp. 315-323, 2003	
	C157	HANSEN, CARL. L. et al., "A Robust And Scalable Microfluidic Metering Method That Allows Protein Crystal Growth By Free Interface Diffusion," PNAS, Vol. 99, No. 26, pp. 16531-16536, December 24, 2002	
	C158	HOFMANN, OLIVER et al., "Modular Approach To Fabrication Of Three-Dimensional Microchannel Systems In PDMS - Application To Sheath Flow Microchips," Lab on a Chip, Vol. 1, pp. 108-114, 2001	
	C159	HOSOKAWA, KAZUO et al., "A Microfluidic Device For Mixing Of Capillary-Drive Liquids," IEEE Trans. SM, Vol. 123, No. 1, pp. 23-24, 2003	
	C160	JUÁREZ-MARTÍNEZ, G. et al., "High-Throughput Screens For Postgenomics: Studies Of Protein Crystallization Using Microsystems Technology," Analytical Chemistry, Vol. 74, No. 14, pp. 3505-3510, July 15, 2002	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	10/637,847		
		Filing Date	August 7, 2003		
		First Named Inventor	Carl L. Hansen		
		Art Unit	1732		
		Examiner Name	Edmund H. Lee		
Sheet	3	of	4	Attorney Docket Number	20174C-004940US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C161	KUHN, PETER et al., "The Genesis Of High-Throughput Structure-Based Drug Discovery Using Protein Crystallography," Current Opinion in Chemical Biology, Vol. 6, pp. 704-710, 2002	
	C162	LAGALLY, ERIC T. et al., "Fully Integrated PCR-Capillary Electrophoresis Microsystem For DNA Analysis," Lab On A Chip, Vol. 1, pp. 102-107, 2001	
	C163	LIU, JIAN et al., "A Nanoliter Rotary Device For Polymerase Chain Reaction," Electrophoresis, Vol. 23, pp. 1531-1536, 2002	
	C164	MCDONALD, J. COOPER et al., "Poly(dimethylsiloxane) As A Material For Fabricating Microfluidic Devices," Accounts of Chemical Research, Vol. 35, No. 7, pp. 491-499, 2002	
	C165	NG, JESSAMINE M. K. et al., "Components For Integrated Poly(Dimethylsiloxane) Microfluidic Systems," Electrophoresis, Vol. 23, pp. 3461-3473, 2002	
	C166	NOLLERT, PETER et al., "Crystallization Of Membrane Proteins <i>in Cubo</i> ," Methods in Enzymology, Vol. 343, pp. 183-199, 2002	
	C167	SANTARSIERO, B. D. et al., "An Approach To Rapid Protein Crystallization Using Nanodroplets," Journal of Applied Crystallography, Vol. 35, pp. 278-281, 2002	
	C168	SASSERATH, J. et al., "Rapid Prototyping And Development Of Microfluidic And BioMEMS Devices," IVD Technology, 12 pages, June 2002	
	C169	STEVENS, RAYMOND C., "The Cost And Value Of Three-Dimensional Protein Structure," Drug Discovery World, pp. 35-48, Summer 2003	
	C170	THORSEN, TODD et al., "Dynamic Pattern Formation In A Vesicle-Generating Microfluidic Device," Physical Review Letters, Vol. 86, No. 18, pp. 4163-4166, April 30, 2001	
	C171	THORSEN, TODD et al., "Microfluidic Large-Scale Integration," Science, Vol. 298, No. 5593, pp. 580-584, October 18, 2002	
	C172	VAN DER WOERD, MARK et al., "Lab-On-A-Chip Based Protein Crystallization," National Aeronautics and Space Administration and Caliper, pp. 1-27, October 25, 2001	
	C173	VAN DER WOERD, MARK et al., "The Promise Of Macromolecular Crystallization In Microfluidic Chips," Journal of Structural Biology, Vol. 142, pp. 180-187, 2003	
	C174	WEBER, PATRICIA C. et al., "Applications Of Calorimetric Methods To Drug Discovery And The Study Of Protein Interactions," Current Opinion in Structural Biology, Vol. 13, pp. 115-121, 2003	
	C175	WESELAK, MARK et al., "Robotics For Automated Crystal Formation And Analysis," Methods in Enzymology, pp. 1-13, 2002	
	C176	WHITESIDES, GEORGE M. et al., "Flexible Methods For Microfluidics," Physics Today, pp. 42-48, June 2001	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	10/637,847		
		Filing Date	August 7, 2003		
		First Named Inventor	Carl L. Hansen		
		Art Unit	1732		
		Examiner Name	Edmund H. Lee		
Sheet	4	of	4	Attorney Docket Number	20174C-004940US

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C177	WU, HONGKAI et al., "Fabrication Of Complex Three-Dimensional Microchannel Systems In PDMS," J. Am. Chem. Soc., Vol. 125, No. 2, pp. 554-559, 2003	
	C178	YEH, JOANNE I., "A Manual Nanoscale Method For Protein Crystallization," Acta Crystallographica, Vol. D59, pp. 1408-1413, 2003	
	C179	ZHAO, ZHAN, et al., "An Integrated Biochip Design And Fabrication," Proceedings of SPIE, Vol. 4936, pp. 321-326, 2002	

60648820 v1

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.